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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,119	01/17/2002	Minghui Hong	2826-9	8997

7590 04/20/2004

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EXAMINER

EVANS, GEOFFREY S

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

144

Office Action Summary	Application No. 10/047,119	Applicant(s) HONG ET AL.	
	Examiner Geoffrey S Evans	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-11,14-19 and 22-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-11,14-19 and 22-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20031030</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A new figure 5 was received on 29 January 2004. This figure is acceptable.
2. Claims 6, 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 currently depends upon a claim that doesn't exist, claim 41. For the remainder of this office action claim 6 is treated as if it depends upon claim 1. Claims 16 and 17 depend directly or indirectly upon canceled claim 12. For the remainder of this office action claim 16 is treated as if it depends upon claim 9.
3. The indicated allowability of the subject matter of claims 5 and 13 is withdrawn in view of the newly cited reference in the Information Disclosure Statement of 30 October 2003 to Shigeru et al. in Japan Patent document No. 8-010,970 A. Rejections based on the newly cited reference(s) follow.
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1, 2, 6, 7, 9, 10, 14, 15, 16, 17, 18, 22, 23, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egitto et al. in U.S. Patent No. 6,509,546 B1 in view of Taura et al. in Japan Patent No. 2-220,793 and Shigeru et al. in Japan Patent No. 8-10,970. Egitto et al. discloses providing a laterally disposed multi-layered

substrate, focusing a first laser beam and effecting relative lateral movement between the substrate and the focus point to cut the substrate. Egitto et al. does not teach using a second laser beam focused at a second focus to cut the substrate nor does Egitto et al. disclose that further laser beams are provided, the number of laser beams corresponding to the number of separate layers to be removed. Taura et al. teaches cutting a thick workpiece by using two laser beams made from a single laser beam using a beam splitter (element 22 in figure 1) to deliver the laser beam at different focus points. Shigeru teaches using a further laser beam to cut a further layer of material, with the number of laser beams (3) corresponding to three separate layers (10A, 10B, 10C), each laser beam having a wavelength and power level (e.g. see paragraph 12) to optimally cut that layer of the composite material. It would have been obvious to adapt Egitto et al. in view of Taura et al. and Shigeru et al. to optimize cutting of a thick workpiece with multiple layers of different materials by using a different laser beam that is optimized for cutting each particular layer.

6. Claims 3, 11, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egitto et al. in view of Taura et al. and Shigeru et al. as applied to claims 1, 9, and 22 above, and further in view of Barnekov et al. in U.S. Patent No. 5,578,229. Barnekov et al. teaches irradiating the second laser beam on a second lateral face of the substrate. It would have been obvious to adapt Egitto et al. in view of Taura et al., Shigeru et al. and Barnekov et al. to provide this to prevent interference with the kerf created by the first laser beam and to reduce the path of debris each laser beam must pass through (see column 2, lines 28-30 of Barnekov et al.).


7. Claims 8,19, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egitto et al. in view of Taura et al. and Shigeru et al. as applied to claims 1,9, and 22 above, and further in view of Kasner et al. in U.S. Patent No. 4,789,770. Kasner et al. teaches using optical sensors to monitor the process and a control means (the computer in Kasner et al. is a functional equivalent of the control means of the instant application; see column 8, lines 39-44 of Kasner et al.) to control the cutting process in response to the optical monitoring. It would have been obvious to adapt Egitto et al. in view of Taura et al., Shigeru et al., and Kasner et al. to provide this to control the cutting process so that the correct laser beam is used to cut the correct layer.

8. Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 6:30AM to 4:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571)-272-1171. The fax phone number for the organization where this application or proceeding is assigned is (703)-872-9306.

GSE


Geoffrey S. Evans
Primary Examiner
Group 1700